

Metropolitan Sewers.

REPORT

As to the Efficiency and Working Condition of the Tubes laid in open Ditches in the Surrey and Kent District;—
by JOHN GRANT, Assistant Surveyor.

Ordered by the Trial Works Committee, April 16, 1849,

“ That the new Assistant Surveyor, when appointed by the Court, do
“ examine the actual efficiency and present working condition of
“ the Tubes laid down in Ditches and Open Sewers, by authority
“ of the Court, since the 1st January, 1849, and do report thereon
“ to this Committee.”

In compliance with the above order I inspected all the sewers referred to. They extend over the district lying between Rotherhithe and Lambeth, and between Camberwell, Kennington, and the Thames. The total length is about a mile and a half in twenty separate lengths, and the cost of them has been 1,607*l.* 12*s.*

There are two other sewers now in progress, but as they are not completed their efficiency cannot be reported on.

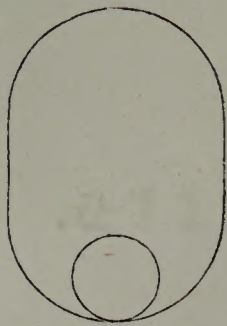
The greater part of them are of Portland cement, with stoneware tubes at the junctions.

In every case the cement tubes were very hard, and serving well the purpose for which they were intended.

The appended Table gives the particulars of each sewer. The chief points examined were as to how far the tubes had served the purpose of carrying off the sewage flowing down the open ditches for which they were substitutes, and the extent to which they had abated the nuisances arising from such a great area of foul matter.

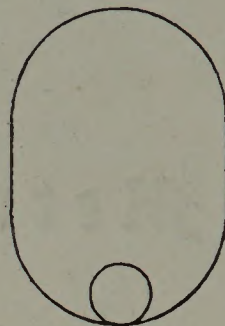
In every case I found that the tubes were large enough to carry off all the sewage passing into them, and that in no instance (according to the information received from the Clerks of the Works), had any damage arisen from their comparatively small area, either to the tubes or the adjoining property.

Cross Section of Old Sewer 5'0" X 3'6"



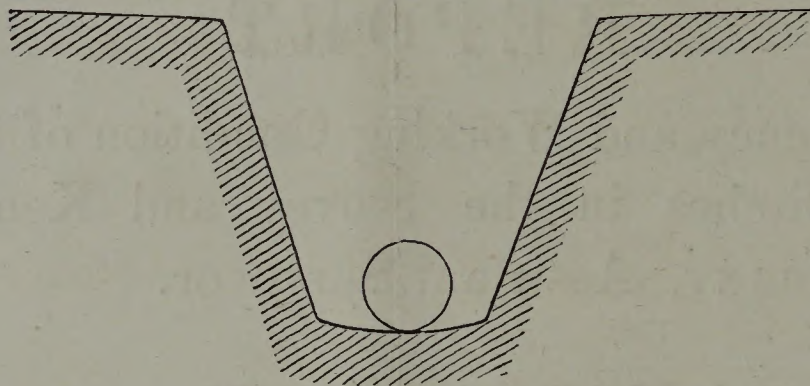
and Eighteen Inch Tube.

Cross Section of Old Sewer 5'0" X 3'6"



and Twelve Inch Tube.

Cross Section of Open Ditch and Eighteen ^{Inch} Feet Tube.



I beg to append hereto a table giving the situation, length, size, material, inclination, cost, and other particulars noted of these sewer pipes. There was found in only one case deposit lying in the sewer.

This was a 12-inch sewer with several bends, and it was laid throughout the greater part of its length at a dead level. In this tube, from an obstruction caused by a quantity of stones, and the fact of privies communicating with it without any regular supply of water, the deposit near the upper end was in a half solid state, and 5 inches in depth; at the middle it was 9 inches. At the lower end it was clear.

This sewer has been laid about two months, and it was found necessary, before laying the tubes, to remove about 700 cubic yards of soil which had accumulated in the open ditch. At the upper end it communicates by a flap valve with the Bermondsey Mill stream. By means of this it can be flushed out at spring tides, and the tides being high at the time of my visit, the experiment was tried of flushing out the deposit.

About five hours after the first inspection I visited it again, and found about half of the deposit gone. I afterwards opened the sewer just below where the deposit was greatest, and opposite two foul privies, the contents of which fall into it. The cause of obstruction was found to be a collection of stones and other substances which had got in by these privies. The tube is now clear.

This sewer had not been flushed from the time of its completion, and there can be no doubt that by admitting a stream of water for some hours once or twice a month it may be kept perfectly clear.

In many cases the inhabitants have availed themselves of the sewer pipe for relieving their houses from sewage; on the other hand, however, instances occur not unfrequently, where the filth is thrown on the surface of the made ground over the pipe sewer.

The worst case is that marked No. 1 in the Table.

The interior of this tube was perfectly clear, but throughout two-thirds of its length it is covered outside with the most offensive soil, thrown from the wretched houses in King's Head yard.

The owners of the property on the opposite side of the sewer have put in closet pans which communicate with the sewer, but the filthy practices of their neighbours prevent them from enjoying that immunity from annoyance which they might expect, and which they have done their parts to obtain.

Twelve closet junctions have been made with this sewer, but ten still remain open.

Until measures be taken for compelling the proper drainage of these buildings, the attention of the Parish Officers should be called to this state of things, which comes within the powers conferred on them by the "Nuisances Removal Act."

In all the other sewers the surface is in an improved state, except at particular spots, where filth accumulates from the privies situated on the top, which have no proper connexion; and where water collects from the sinks; but throughout the greater part of their length, dry ashes and earth have been thrown on the top of the pipes.

It would add very much to the improvement effected if, where this has not already been done, the ground on the top of the sewers could be filled in to the level of the adjoining land; but as this would add considerably to the cost, and these sewers are laid for a temporary purpose, I hesitate to recommend it.

Notes of each are inserted in the column of "Remarks" in the Table.

Throughout these sewers, about a fourth of the number of closets and privies adjoining have been connected with them.

These connections have been made by the parties themselves, through private bricklayers. The greater number are nearly at right angles to the line of sewer, and one or two against the stream.

In some cases the privies are from 30 to 80 feet from the line of sewer, and merely the overflow of the cesspools runs into it.

There are several instances in the sewers numbered in Tables 1, 2, 3, 8, 9, 10, 11, and 14, of unconnected privies. All these junctions with the privies should be made good immediately by the owners of the adjoining property, as the filth from them lying outside the sewer will in time cause nearly as great a nuisance as at first, besides endangering the efficiency of the sewer by its dropping, in an undiluted state, into the unprotected junctions.

The sinks are all untrapped.

GENERAL CONCLUSIONS.

That in every case but one the interiors of the sewer tubes were found clear of deposit and in good working condition.

That in the exceptional case, the sewer (in Hickman's Folly) was cleared of half of its deposit by a few hours flushing; the more immediate cause of deposit being an accumulation of stones, admitted by an open privy.

This sewer may be kept perfectly clean and efficient by a similar flushing once or twice a month, which I beg respectfully to recommend.

That the faulty connections made by private bricklayers show strongly the necessity of the most minute details of a perfect system of drainage being executed under one management, and the most vigilant supervision of the Officers of the Court.

That, on the whole, the state of these temporary works may be reported as very satisfactory, and that the general tenor of the answers to my inquiries among the inhabitants was, that the sewers have effected a very great improvement, the chief partial exception to this being in the case of the Sewer (No. 2) in King's Head yard, in which the improvement may be made as great as in the others, by causing the owners of the property to put closet pans in connection with the sewer, as their neighbours on the opposite side of the sewer have already done.

JOHN GRANT,
Assistant Surveyor.

*Sewers Office, 1 Greek street, Soho square,
30th April, 1849.*

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SURREY

TABLE showing the present CONDITION of TUBES

No.	Situation of Sewer.	Length in Feet.	Size in Inches Diame- ter.	Material.	Fall in 10ft. in Inch- es.
I.	King's Head Yard, Tooley Street	225	12	Cement and Stoneware	1
II.	Vine Yard, Tooley Street	400	12	Ditto	$\frac{3}{4}$
III.	Norris' Rents, Western Street	330	12	Ditto	$1\frac{1}{2}$
IV.	East Side Walworth Road	1,050	12	Ditto	$\frac{3}{4}$
V.	Montpelier Gardens, by Newington Workhouse .	400	18	Ditto	1
VI.	Lock's Fields, by Cottage of Content	450	9	Stoneware	2
VII.	Back of Brook Street, Lambeth	780	12	Cement and Stoneware	1
VIII.	Back of King Edward Street and Mead's Row .	500	9	Stoneware	$\frac{1}{4}$
IX.	Barron's Buildings and Whiting St., Waterloo Rd.	300	12	Ditto	$\frac{1}{4}$
X.	{ Barnes' Terrace and James Street, back of } { Granby Gardens and New Cut }	760	12	Cement and Stoneware	$\frac{1}{4}$
XI.	Back of Cardigan Street, Kennington Cross .	580	12	Ditto	$\frac{1}{4}$
XII.	Hickman's Folly and Gedling Street, Dockhead .	1,020	12	Stoneware	0
XIII.	Southampton Street, Camberwell	400	9	Cement	$\frac{1}{4}$
XIV.	Russell Street and Thames Street, Rotherhithe .	410	12	Cement and Stoneware	$\frac{1}{2}$
XV.	Rotherhithe	140	9	Stoneware	$\frac{1}{2}$
		<u>7,745</u>			

*Sewers Office, 1 Greek street,
30th April, 1849.*

& KENT.

laid in OPEN DITCHES since 1st January, 1849.

Cost.	Depth of Water running in Sewer.			Deposit.	Date of Completion of Sewer.	Remarks.
	Upper End.	Middle.	Lower End.			
£ s. d.	Inches.	Inches.	Inches.			
47 10 0	1	2	4	None	Feb. 3	{ 150 feet in length, covered with very foul matter on top, thrown there by inhabitants—12 closets communicate, 10 do not.
106 0 0	5		5	None	Feb. 23	{ Junctions generally made good to drains—soil from two privies dropping on top.
84 10 0	3		8	None	Feb. 13	{ Junctions generally made good—soil from one privy dropping on top.
250 0 0	1		1	None	March 17	{ Eight closets join—surface dry. Most of the privies are 30 feet distant from sewer.
120 0 0	11		7	None	March 23	{ Surface dry and partially levelled—privies all some distance from the sewer, and do not drain into it.
72 0 0	1		2	None	Jan. 19	{ Surface dry and levelled—no closets communicating with the houses on opposite side of road.
180 10 0	1		8	None	March 17	{ Between lower ends of two rows of gardens—privies at a distance. Surface in a fair state.
75 0 0	2½		5	None	March 17	{ Surface generally dry, excepting 80 feet at lower end. Eight closets communicate.
45 0 0	7		7	None	March 24	{ In two lengths—some foul water and soil from two privies dropping on top.
114 0 0	3		6	None	March 24	{ In three lengths—foul matter at various spots on top. Some junctions open.
87 0 0	2		1½	None	March 23	{ Surface at upper end dry—eight junctions completed. At lower end the soil from several closets drops on surface, which is foul.
282 0 0	5	9	0	De-posit	Feb. 24	{ The only sewer found foul <i>inside</i> . A few junctions open—surface in a fair state. Closets not supplied with water.
60 0 0	1½		2½	None	March 3	{ By side of turnpike road. No privies near—surface dry.
66 12 0	1		2	None	April 21	{ The owners have not had much time to communicate with sewer. Three closets connected—surface still imperfect—junctions open.
17 10 0	1		1	None	April 21	
1,607 12 0						

JOHN GRANT,
Assistant Surveyor.

Metropolitan Sewers.

REPORT

ON THE

Efficiency and Working Condition of the Tub
laid down in Open Ditches since the 1st
January, 1849.

BY JOHN GRANT,
Assistant Surveyor.

APRIL 30TH, 1849.

JOHN GRANT,
Assistant Surveyor.